PROBLEMS AND SOLUTIONS

	Causes	Problem										
		Thread mill is showing accelerated or excessive wear	Cutting edges are chipping	Thread mill is breaking in the first hole or part	Thread mill is creating excessive chatter	Out of round thread is produced	Bell mouthed thread form (small at bottom, big at top)	Part rejection because of rough flank finish	Steps in thread profile	Gauge difference from part to part	Machine not making correct paths to create thread profile	Control not accepting the program
Catalog	Incorrect tool selection			1	1							
	Incorrect speed and feed selection	2, 3	2, 3		2, 3			2, 3				
Speed and Feed	RPM too high	5										
	RPM too low				4		4	4				
	Machine tool specifications restricts RPM's			5, 19								
	Feed rate too high		7	7			7	7	7			
	Feed rate too low	6										
	Incorrect adjusted feed rate adjustment ratio			12								
	Machine tool specification restrict feedrate					7, 19						
	Ramp-in is programmed as an axial move			20					20			
Tool	Thread mill moved or slipped in its holding device	13	13	13	13			13	13			
	Tool is sticking out of the holder too far	15	15	15	15			15	15	15		
	Runout between thread mill and holder				10			10				
	Incorrect coating creating built up edge	8, 17								8, 17		
	Helix angle too low				9			9				
	Excessive thread mill wear								11	11		
	Excessive tool pressure	7, 11, 14					7, 11, 14					
Machine	Workpiece moving in its fixturing	16	16	16	16			16		16		
	Insufficient coolant pressure or flow	17	17									
	Lack of machine rigidity	16	16		16		16	16				
Programming	Incorrect number of passes			22			22					
	Incorrect program variables			18, 26							18, 26	
	Didn't account for X/Y radial moves for tapered threads										24, 26	
	Incorrect cutter compensation variables			23, 26								23, 26
	Helical interpolation option not on machine or turned "off"										21, 26	21, 26
	Machine tool control is not formatted to standard EIA/ASCII/ISO Code											25, 26

Solutions

1.	Refer to the catalog to insure proper tool selection.	14.	Check the tool for excessive wear, beginning threads will wear the fastest.
2.	Verify the correct speed was selected from the catalog speed and feed chart.	15.	Make the amount of overhang in the holding device as short as possible.
3.	Verify the correct feed rate was selected from the catalog speed and feed chart.	16.	Verify the workpiece is being properly clamped, retighten or increase stability if necessary.
4.	Increase the spindle speed (RPM).	17.	Increase the coolant flow and volume.
5.	Decrease the spindle speed (RPM).	18.	Check the milling program variables, especially the positive or negative value associated with I and J values.
6.	Increase the feed per tooth (IPT).	19.	Make sure the machine tool has the appropriate axis and path speed capabilities.
7.	Decrease the feed per tooth (IPT).	20.	Make sure the thread mill is arcing in the major diameter instead of making a radial move.
8.	Investigate other coatings.	21.	Make sure the machine tool has helical interpolation option and that it is "on".
9.	Increase the tool helix.	22.	Increase the number of thread mill passes.
10.	Gauge runout between thread mill and tool holder.	23.	Make sure the cutter compensation variables are input into the G41 program line.
11.	Perform tool change at quicker intervals.	24.	Adjust the program for pipe tap threads to taper out on diameter in X/Y directions to create proper form.
12.	Adjust the feedrate ratio properly to the correct actual penetration rate for internal threads. Refer to page 7 for formula.	25.	Request information from the machine tool builder regarding its programming formats.
13.	Use hydraulic clamping chuck.	26.	Fax a copy of your program to the Applications Engineering Department at 330-364-7666.